



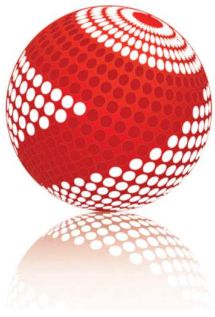
ARYA OMNITALK
WALKY TALKY | GPS TRACKING | TOLL & HTMS

Response to TRAI Consultation Paper dated 8th February 2018

Method of allocation of spectrum for Public Mobile Radio Trunking Service (PMRTS) including auction, as a transparent mechanism

Response submitted by :

Arya Omnitalk Radio Trunking Services Pvt Ltd.



Arya Omnitalk Radio Trunking Services Private Limited

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Chapter - II

Q1. Do you agree that existing License Service Area (LSA) based authorization criteria for PMRT license is appropriate? If not, should there be a city/district based authorization aligned with spectrum assignments?

Yes, we are in agreement that the current License Service Area based authorization criteria is appropriate. We also suggest that the spectrum assignment for additional cities in an existing Licensed Service Area should happen by filing a simple application.

Q2. Do you suggest any other criteria/change in license/ area of authorization for PMRT service? Elaborate your suggestions with supporting facts.

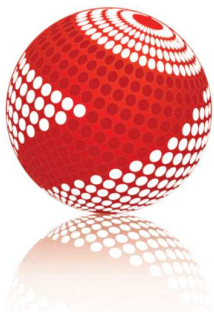
The current policy of Import license for radio terminals is not progressive for the operator and it restricts the growth of the business or efficient use of spectrum by the operator. It does not take into account churn, wear and tear arising out of normal usage of the radio, neither does it encourage efficient use of spectrum. PMRTS industry is facing the situation of non-availability of analog technology so digital technology with capability of backward compatibility with analog should be allowed for import for the operators. Documents are annexed indicating the procedure being followed for start of service in a new city.

We also suggest that the unit of spectrum allocation should be 6.25 KHz or 6.25 KHz equivalent against the 25 KHz as of today.

Criteria for radio loading could be 90 end terminals per unit of spectrum and there need not be any cap on the number of radios per unit of spectrum. It is to be considered as a good effort or job done, if the licensee can achieve a better loading capacity.

dPMR & DMR uses 6.25 KHz or 6.25 KHz equivalent (12.5 KHz) carrier spacing. Further there is no issues currently on the spectrum being available. While allocation channels a minimum adjacent channel spacing of 250 KHz should be ensured. Spectrum assignment must be done early by DOT – WPC and within 10 days of submission of application.

We also suggest that the need of seeking permission from DOT/WPC while relocating any of the existing sites or splitting sites by the PMRTS Licensee if the site proposed meets the SACFA requirements. Suggested change in procedure for applying for SACFA clearance for such cases - The PMRTS operator should also be allowed to apply for SACFA clearance for any site within the Licensed Service Area in PMRTS band through just an intimation to WPC for the new service area/site so that the process of WPC spectrum allocation and SACFA clearance can go concurrently.



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The present procedure of renewing the operating license every year is not clear and it is ambiguous. There should be no requirement of renewal of operating license once taken and the validity of operating license should be valid for the period of validity of PMRTS license.

The PMRTS license agreement does not mention clearly that the end customer need not obtain a separate user license.

Choice of technology should be left with the operator based on technical, commercial criteria's.

A PMRTS licensee should not be required to applying for experimental license for the purpose of testing/programming and validating/checking the RF coverage requirements for the operating license and radio repairs. This is also an area which needs validation.

Import license for Additional infrastructure as spares should be allowed to be freely importable but capped to a reasonable extent.

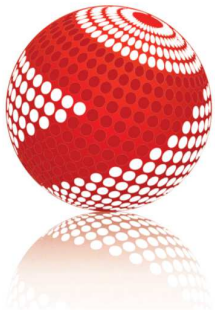
Since the AGR definition includes revenue from sale of handsets & revenue from sale of accessories for the purpose of levy of 8% license fee, a PMRTS licensee has to separate transactions for sale of radio terminal /hire or lease in a separate company. However the PMRTS license does not mandate DPL to be taken by a PMRTS license holder, this now becomes mandatory to be taken for above said separate company. This should be done away with as it adds a lot of cumbersome procedure unnecessarily to the PMRTS licensees, subject to this separate company engaging in sale/hire/lease of radio terminals only to customers of PMRTS licensee. There is also confusion on radio terminals being given on hire or lease to the end customers. This ambiguity should be eliminated and clarified to all RLOs that all PMRTS licensees and their separate company dedicated to serve PMRTS customers for radio/accessories transactions shall be allowed to freely offer radio terminals on rent, lease or hire/purchase to customers of PMRTS licensee.

We are not suggesting any other change in the license/area of authorization for PMRT services.

Q3. Do you suggest any change in the duration of license from the present duration of 20 years? Please provide supporting justification.

We agree that the current duration of 20 years for PMRT Service license is adequate and no change is required because:-

- 1. The expensive PMRTS infrastructure (with the operator) and the user terminals (with the end user) is having more residual life. Life of the PMRTS infrastructure is*





20 year extended able to another 5years. The PMRTS user terminals are seen to have a life of 10-12 years. The user terminals procured by the customers in the last 3 years will have a residual life till 2024. As a company we have sold at least 12000 new radios in the last 3 years.

2. Some of the latest procurement of infrastructure items has happened as late as 2014 and with the assured support from manufacturer being 7 years from date of items / models being obsoleted, so there is more residual life for the infrastructure items.

Keeping the above in mind, we need to safeguard the huge investment of the PMRTS licensee as well as end users' investment in terminals based on life of equipment.

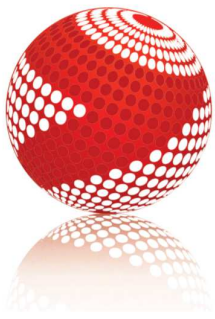
We recommend keeping the PMRTS license duration to 20 years extendable further by a similar period.

Digital Infrastructure/ Equipment Investments already made:

Large PMRTS providers are choosing Digital Trunked Radio technologies which have backward compatibility with the Analog Trunked Radio systems, allow graceful migration from Analog to Digital, and protect current investments in RF sub-system and power amplifiers and offer Dual/Mixed mode capability which allows both Digital and Analog Radio terminals to be operated together on same infrastructure. AS a PMRT service provider we have chosen an NXDN based NexEdge Trunked Radio System from Kenwood Japan and has been deploying Digital Trunked Radio in Analog mode since the year 2011-12. The NexEdge Digital Repeaters are capable of operating in Analog or Digital or Mixed Mode allowing the PMRTS provider to gradually and gracefully migrate their Analog network – an extremely critical requirement for the PMRTS provider since the price points of the Digital radio are far higher than Analog radios today (please refer Section Analog & Digital PMRTS for details on Migration to Digital). Such investments obviously have been already made in the Frequency Band which the PMRTS provider is currently operating the Analog Trunked Radio Infrastructure in. Hence the new Digital capable Trunked Radio infrastructure is being deployed also in the 800 MHz band.

User Investments in 800 MHz Radio terminals

The terminals sold to end users also have a life of 8-10 years. Approximately 18-20,000 Radio terminals sold in the last three years by the PMRTS Industry still have a sizable life span of another 7 years left before these can be considered for up-gradation or migration to another radio terminal by the end customer. In order to protect the investments made by the end user in Radio terminals, the PMRTS Operators need to continue to operate in the current band of 800 MHz. Also due to obsolescence being faced by some PMRTS



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Operators, some of the customers have also opted for Digital Radios, which are being used in Analog mode, so as to continue using them after PMRTS Operators migrate from an Analog to Digital PMRTS. Therefore substantial investments already made by customers need to be definitely protected by allowing the PMRTS Operator to continue offering services in the 800 MHz band.

A large PMRTS provider has already made investments for almost 10% of their installed Channels /Repeaters in Digital capable Trunked Radio Infrastructure. Taking into account that the life expectancy of the Digital capable infrastructure to be 15 years extendable by another 7 years, the investments of such PMRTS providers need to be protected for the next 20 years. Operating in any band other than 800 MHz shall completely jeopardize the PMRTS provider's as well as end user's financial viability.

Chapter – III

Q4. Keeping in view the existing PMRT services market size and growth potential, which methodology of allocation of spectrum will be most suitable for PMRT services?

- (a) Auction (or)**
- (b) Administrative allocation**

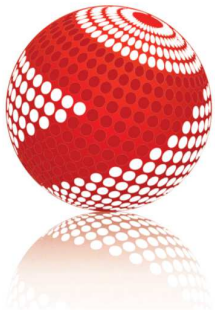
Kindly provide supporting arguments for your choice.

Where the demand for spectrum is higher than the spectrum availability. In the cellular industry there is a very high number of subscribers and due to high subscriber density there is high demand for spectrum. Further the high usage of voice, video and data end up increasing the requirement of spectrum.

Spectrum requirement is also high since the service offered like Video, entertainment on the move etc use up large quantity of bandwidth.

While In contrast the PMRT services is a niche service and

- 1. It is used only by institutional clients. This service is used for mission critical voice communication and used by certain select segment like Petroleum corporations, Prisons, Fire Brigade, Ports, Airports, Municipal corporations, public utility services, power distribution companies, security agencies, manufacturing, construction, hotels, hospitals, educational institutions etc*
- 2. PMRTS subscriber penetration is very low and it is not comparable with the Access services on any operating parameter and hence auction may not be an option.*



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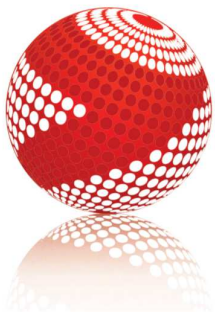
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3. *The total PMRTS subscriber base is less than 56000 radio users nationally. Hence the auction for such a small but niche industry is not advisable.*
4. *PMRTS as a service has limited application. It mostly offers semi duplex voice communication, restricted PSTN connectivity. The technology is challenged by slow data speeds and so video or data transmission is also very less.*
5. *In the current analog PMRTS band of 814 – 819 MHz we can get 200 channels with 25 KHz channel spacing. This band of 5 MHz if deployed in the digital – spectrally efficient technologies would result in 800 channels with a channel spacing of 6.25 KHz.*
6. *Delhi NCR region is the city with the highest use of channels (137 channels being used currently + pending in any city of operation across India. This means that after 18 to 20 years of operation, the actual use of channels is just 17% of the total available channels and thus very clearly there is room for expansion and for accommodation of many more new operators. 83% of the available channels are still free.*
7. *TRAI notes on the international practices being followed in the PMRTS industry (in countries like Singapore, Malaysia, France etc., clearly evidences that the spectrum is only issued on an administrative basis and not on the basis of an auction.*
8. *DOT has been seen to be allowing / assigning spectrum on an administrative basis, to similar services in the form of CMRTS (same technology, same end use). Such a differentiation will distort level playing field- all this despite the PMRTS service being highly spectrally efficient in comparison with CMRTS. There are many live example to show how due to poor choice of technology and due to higher allotment of spectrum, the loading efficiency per spectrum assigned in most PSU is seen to be very low in comparison with the PMRTS services.*
9. *Some of the other reasons why auction of spectrum would not be feasible for the PMRTS industry would be based on the following*
 - a. *Given that the PMRTS industry market is less than INR 40 Crore today, the license and spectrum fee presently account for more than 10% of the total revenue. So a serious relook on whether the auction should be made applicable or not is suggested.*
 - b. *The Spectrum allocation for PMRTS is based on initial allocation of 5 channels and further allotment happens only when the operator can establish that the extent of loading has reached 90% of the target capacity (of 450 nos. for a 5 channel system). When such is the system for allotment and which is also based on the addition of subscribers; then this calls for a relook at the need for an auction of spectrum for PMRTS.*
 - c. *Under the auction based system the operator would be required to pay upfront for a larger holding of spectrum which is more that what they actually would*



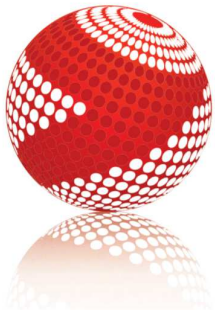


- need. Considering the fact that the market is growing by less than 10% every year it calls for a serious relook on the need for auction of spectrum and the need to hold on to larger quantity of spectrum upfront.*
- d. *Considering that PMRTS market is constituted of a niche segment of institutional customers, the market for PMRTS is confined to a limited number cities based on the spread of industries and the prevalence of handful of select segments or types of industries who actually subscribe for this service. Hence, for a PMRTS operator, every city or town in the LSA may not offer business potential unlike in the case of access services. The roll out of new PMRTS networks will be limited within the licensed service area.*
- e. *Looking at the current ground reality in all service area's and considering that there is no entry barriers for becoming a PMRTS operator, the actual demand for PMRTS spectrum has been very low and slow every year. The current allocation of spectrum if we include the pending application for spectrum is far lesser than the supply of spectrum. So we suggest that there is a relook on the need for an auction*
- f. *In any licensed service area there would be only one or two Tier I markets of cities and the rest of it would all be Tier II & Tier III cities. The PMRTS industry experience has shown that in a Tier II or Tier III market it takes almost 5 years to reach a subscriber base of 500. Therefore in most of these Tie II & Tier III markets there is no need for spectrum exceeding 10 channels for a period of 5 years.*
- g. *We suggest that the new unit of spectrum to be made as 6.25 KHz or its equivalent. This would ensure a 4 times increase in the spectrum fees for the department.*

Q5. Do you propose any other methodology other than the options provided in Q4 above for allocation of spectrum for PMRTS? Please provide detailed justifications.

Further since there is no need for contiguous spectrum to be assigned to the operator in the PMRTS industry, the current process of allocation for spectrum i.e., on the first come first serve basis is good enough. Also as mentioned above the supply far exceeds demand and the demand is seen in select cities within the LSA.

Q6. If you have opted for auction as the methodology for allocation of spectrum for PMTRS,



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- (a) What criteria/norms should be there for auction of spectrum so that efficient utilization of the spectrum is ensured? Should there be preference for Digital PMRTS networks?
- (b) Should the spectrum auction be held on LSA basis or city basis?
- (c) What should be the effective date of allocation of spectrum (if won through the process of auction)?
- (d) What should be the rollout obligations for PMRT service providers? What should be the penalty to be imposed in case of non-compliance of roll out obligation? Please provide detailed justifications?

Please refer answer to question number 5 on why auction is not the best option and why administrative allocation is being preferred.

Q7. If you feel administrative allocation is the best methodology, then

- (a) Are the existing criteria of assignment of RF carriers sufficient or should there be different criteria/norms for assignment of spectrum? If existing criteria is not sufficient, what are the proposed criteria for such assignments so that efficient utilization of the spectrum is ensured?

We feel that the current system and criteria for allocation of spectrum is correct and sufficient. However, we have suggested that the unit of spectrum should be 6.25 KHz or 6.25 KHz equivalent in place of the 25 KHz allocation currently. The current spectrum holding of the operator should be protected and we should be give a 5 – 7 year time frame within which the migration to digital platform can be implemented. Currently there are various digital technologies which are available in the market and they include TETRA which uses 25 KHz - 4 slot TDMA technology; DMR which is a 12.5 KHz - 2 slot TDMA technology and dPMR which is 6.25 KHz CDMA technology.

WPC should consider to build a separate channeling plan for 6.25 KHz, 12.5 KHz & 25 KHz so as to cater to all the good spectrally efficient digital technologies.

In analog technology the loading norm of 90 subscribers per channel would become quadrupled for Digital technology. So the analog technology will provide for a loading of 18000 subscribers on a 5 MHz of spectrum while the same loading will become 72,000 subscribers when the Digital Trunked technology is deployed (due





to its higher spectrum efficiency). The actual situation for a Digital PMRTS Operators would be that they have to put up extra sites within the Service Area which are interconnected for better in-building coverage and data applications. This shall bring down the loading per site to about 63 subscribers per 6.25 KHz Channel, thus still providing for 50,000 subscribers in a 5MHz Spectrum as compared to a capacity of 18,000 subscribers with Analog Technology.

We recommend that existing PMRTS Operators currently in the 811-814 MHz (Digital) and 814-819 MHz (Analog) band may continue to be allocated the same bands with analog operations being given 5-7 years time to migrate to Digital technologies. Earlier migration to Digital should be incentivized and this band of frequency can be surrendered

(b) Should administrative price of spectrum be calculated LSA wise? If yes, what should be the basis and formula for determination of administrative price? Suggest alternate calculations, if any

It is recommended that spectrum allocation be based on a service area of any 30 Km radius. Therefore the price of the spectrum shall be calculated not on LSA basis but on new definition of service area proposed (with 30 KM radius) within the LSA.

There should be no restriction on number of service areas of 30 Km radius within LSA.

Parameters	Today	Proposed (Metro)	Proposed(Non-Metro)
Minimum allocation per service area of 30 Km radius	5 RF carrier of 25 KHz each as per Channeling plan 6 of NFAP-2011	12 RF carriers of 6.25 KHz or 6.25 KHz equivalent as per channeling plan submitted by us	8 RF carriers of 6.25 KHz or 6.25 KHz equivalent as per channeling plan submitted by us
Spectrum allocation	5*25 = 125 KHz	12*6.25=75* KHz	8*6.25=50* KHz
Royalty	48,000/- per annum	1,15,200/- per annum	76,800/- per annum
Royalty fee per KHz per annum	384/- per KHz per annum	1536/- per KHz per annum	1536/- per KHz per annum





Spectrum	100/- per subscriber per annum	100/- per subscriber per annum	100/- per subscriber per annum
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**This also means allocating 6 carriers 12.5 KHz channels for 2 slot TDMA technologies and 3 carriers for 25 KHz TDMA technologies*

Chapter – IV

Q8. Out of the bands discussed in Table 3.2 above, which are the preferable bands for the PMRT services in India? List out in the order of priority. Are the bands suggested by DoT as mentioned in the Table 3.3 will be adequate to cater for the spectrum requirements of PMRTS?

Since the PMRT services are more viable and prevalent in the Metros and mini-Metro cities such environments are having high building density. The band chosen for PMRTS should therefore have a very good in-building penetration. For meeting this requirement the 800 MHz band is the most appropriate band for PMRT services. The three sub bands proposed (preferred) by DOT have two sub bands in 800 MHz but the second sub-band of 5 MHz from 819-824 MHz is not fully available as 2 MHz from this sub-band is already de-licensed and another 1 MHz is being considered for M2M/IoT communications. So effectively only 2 MHz out of the sub band 819-824 MHz (paired with 864-868 MHz) is available for PMRT services.

In view of the above, keeping the future need of the industry in mind as well as complying with DOT desire to not allocate more than 8 MHz for PMRT services in the 800 MHz band, we suggest the following bands be considered for PMRT services.

S.No.	Frequency band in total (MHz)	Total Bandwidth
1	814-819/859-864 MHz	5.0 MHz
2	811-814/856-859 MHz	3.0 MHz

If this recommendation is accepted it will cause no disruption to the PMRTS industry.

The above mentioned bands can be allocated for PMRT Services with different channeling plans to cater to all available technologies i.e. 6.25 KHz, 12.5 KHz and 25 KHz.

Q9. Taking into consideration the existing allocation by DoT and Authority's latest recommendation for delicensing spectrum for M2M, would it be feasible to consider the band 819-824 MHz/ 864-869 MHz for allocation to PMRTS licensees?





Following points from the Consultation Paper need to be deliberated:-

1. 2 MHz out of the above mentioned band (865-867 MHz) has already been delicensed for the use of low power equipment/devices with maximum transmitted power of 1 W, maximum Effective Radiated Power 4W and maximum channel bandwidth 200 KHz. This is primarily delicensed for RFID applications.
2. TRAI has already recommended vide its recommendations dated 5th September 2017 delicensing of additional 1 MHz (867-868 MHz) for catering to M2M/IOT deployments.
3. There are currently no allocations for PMRTS and CMRTS in this band as well as there is no specific demand pending with DOT in this band.

In light of the above out of 5 MHz only 2 MHz can be considered for PMRTS which in our opinion is insufficient to cater the requirement of PMRTS industry. Therefore it is not possible to consider the band 819-824 MHz/864-869 MHz for allocation to PMRTS licenses.

Q10. Which other candidate band will be most suitable for PMRTS if the band 819-824 MHz/ 864-869 MHz (5 MHz) is not to be considered for allocation to PMRT services? Please support

Since the band (864-869 MHz) is not available due to delicensing of 3 MHz we suggest the following bands for PMRT services. The below would be the order of our preference as below:-

S.No.	Frequency band in total (MHz)	Total Bandwidth
1	814-819/859-864 MHz	5.0 MHz
2	811-814/856-859 MHz	3.0 MHz

Q11. What should be the minimum block size of spectrum to be put for auction? How contiguity of spectrum can be ensured?

The spectrum required shall be determined by the geographical roll out plan foreseen by the PMRTS operator. We recommend that for every 30 KM radius circle of coverage sought by the PMRTS licensee the minimum block size of spectrum to be allocated should be 12 speech paths for Metro Cities and 8 speech paths for Non-Metro cities /towns, which for



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the various technologies available shall translate into 12 spots of 6.25 KHz Channel spacing, 6 spots of 12.5 KHz Channel spacing and 3 spots of 25 KHz spacing for Metro Cities and 8 spots of 6.25 KHz Channel spacing, 4 spots of 12.5 KHz Channel spacing and 2 spots of 25 KHz spacing for Non-Metro Cities respectively. We have also suggested for administrative allocation of only 8MHz of spectrum for an industry which is niche and which is critical to manage during situations of disaster which can be natural or manmade. The other important point is that there is no need for contiguous spectrum to be allotted for the PMRTS industry.

Q12. In case spectrum is to be auctioned, which methodology /approach(s) should be adopted for valuation and associated reserve price of Spectrum for PMRTS and why? Please justify your answer.

At present the license fee and SUC applicable for PMRTS compared to cellular industry is as follows:-

Type of Service	LF per sub per month (INR)	SUC per sub per month (INR)	Upfront fee per sub (INR)	Total	Capex per sub
Cellular	9.40	4.70*	11.80	25.90	2,000/-
PMRTS	44.00	17.22	0.00	61.22	15,000/-

*approximated averages

ASSUMPTIONS CAN BE SEEN ON ANNEXURE II (A)

From the above table the following can be concluded:-

- The PMRTS industry on a per subscriber basis is paying much higher license fee as well as Spectrum Usage Charge including upfront auction fee paid by other Access Services.
- In recommending the basic unit of spectrum to be allocated at 6.25 KHz or equivalent the Government shall increase its revenue from PMRTS industry by four times on a per KHz spectrum issued basis. (See table under answer 7(b))
- The same principle can be kept in mind as more sophisticated digital technologies evolve which enable the basic unit of spectrum to be allocated even lower than 6.25 KHz.



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The above approach will ensure that no additional spectrum beyond 8 MHz need to provisioned for the PMRTS industry while increasing revenue on a per KHz basis for the Government, thus eliminating the need for auction altogether.

Q13. In case spectrum is to be auctioned, which methodology/approach(s) should be adopted for calculation of spectrum usage charge? Please justify your answer.

We are not suggesting for auction and this question has been answered in question 12.

Q14. Whether the concept of spectrum cap shall be applicable on assignment of spectrum to the licensees for PMRTS? Justify your answer.

We do not agree with the method used by TRAI percentage share of existing assignment in the designated PMRTS bands.

We have gone by the maximum number of channels allocated and pending for allocation for any single operator in a city in the licensed service area. The percentage share of spectrum is thus recomputed as below:-

Arya Omnitalk	338-340 MHz	811-814 MHz	814-819 MHz	Total for all 3 bands	Total channels available in all 3 bands	%age Share
Mumbai	0	0	80	80	600	13.3%
Chennai	0	0	55	55		9.1%
Delhi	0	0	50	50		8.3%
Vizag	0	5	35	40		6.6%
Kolkata	0	0	20	20		3.3%
Pune	0	0	15	15	600	2.5%
Ahmedabad	0	0	15	15		2.5%
Baroda	0	0	15	15		2.5%



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Surat	0	0	15	15		2.5%
Bharuch	0	0	10	10		1.6%
Dahej	0	0	5	5		0.8%
Indore	0	0	15	15		2.5%
Hyderabad	0	0	5	5		0.8%
Kochi	0	10	0	10		1.6%
Jaipur	0	0	5	5		0.8%

Based on our recommendations of migrating all existing PMRTS licensees to a digital technology and allocating spectrum on the basis of 6.25 KHz or equivalent the above table shall transform into the following after completion of migration (which may take 5-8 years):-

Arya Omnitalk	338-340 MHz	811-814 MHz	814-819 MHz	Total for all 3 bands	Total channels available in all 3 bands	%age Share
Mumbai	0	0	80	80	1600	5.0%
Chennai	0	0	55	55		3.4%
Delhi	0	0	50	50		3.1%
Vizag	0	5	35	40		2.5%
Kolkata	0	0	20	20		1.2%
Pune	0	0	15	15		0.9%
Ahmedabad	0	0	15	15		0.9%
Baroda	0	0	15	15		0.9%
Surat	0	0	15	15		0.9%
Bharuch	0	0	10	10		0.6%
Dahej	0	0	5	5		0.3%



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Indore	0	0	15	15		0.9%
Hyderabad	0	0	5	5		0.3%
Kochi	0	10	0	10		0.8%
Jaipur	0	0	5	5		0.3%

From the above table there doesn't seem to be any concern for spectrum in the near future. However to prevent any situation of monopoly in the future we would like to suggest a spectrum cap of 50% across bands for any given service area.

Q15. In case you are of the view that provision of spectrum cap should be there, what should be the mechanism for applicable spectrum cap?

- (a) Whether any one of the spectrum cap i.e. intra-band or overall shall suffice the requirement as of now? Or**
- (b) both caps should be made applicable simultaneously?**
- (c) What should be the appropriate criteria for spectrum cap?**

The methodology has been suggested in our answer to question 14.

Q16. What should be the duration/validity of assignment of spectrum to PMRT service provider? Should it be with the same duration as that of the license (20 Years)? Please support your answer with facts.

As explained in the previous sections we are recommending that a PMRTS licensee shall only be provided a minimum start up spectrum barely sufficient to load 1,000 subscribers in a metro city and 700 subscribers in a non-metro city.

We definitely recommend the PMRTS license duration to be for a minimum period of 20 years for the following reasons:-

- a) The PMRTS infrastructure is very expensive*
- b) Life of the PMRTS infrastructure is 15-20 extended able to another 5-7 years*
- c) The PMRTS terminals are also having a life of 10-12 years.*

PMRTS licensee should have the right to hold on to the minimum spectrum as well as to get additional spectrum administratively for the entire period of the validity of the license.





We also suggest that the licensing body should have the right to withdraw the spectrum should the licensee fail to establish any of the following:-

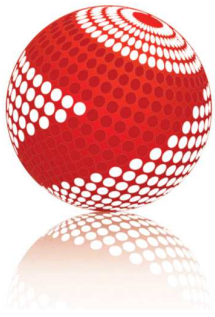
- *Meeting the loading criteria consistently for a period of 6 months based on which the additional spectrum was issued to the licensee.*
- *Failure to roll out the PMRTS network within 12 months of allocation of the minimum start up spectrum.*

Q17. If the duration of validity of spectrum is to be made lesser than the validity of license, should there be an option with the licensee to renew? What should be the specific conditions for such renewal?

PMRTS licensee can hold on to spectrum until the network is rolled out and operations actually justify holding that spectrum. In PMRTS spectrum is only issued based on the actual loading achieved by the licensee and there is no question of additional or extra spectrum being held by the licensee

This approach ensures that there will neither be any hoarding of spectrum nor any excess allocation over the specified norms/criteria.

As with digital technologies today and also in the future the government may incentivize migration to newer and more spectrum efficient technologies to ensure that the industry is never starved of spectrum.



Arya Omnitalk Radio Trunking Services Private Limited

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Annexure II

**Government of India
Ministry of Communication
Department of Telecommunications
Wireless Planning & Coordination Wing
Sanchar Bhavan, New Delhi – 110 001**

No.: L -14004/01/2012- NTG

Date: 02.11.2016

ORDER

Subject: Wireless Operating License for Access Service Providers-reg

In pursuance to the amendments dated 02.11.2016 to the UL, UAS, and CMTS Service Licenses, the requirement of obtaining Wireless Operating License (WOL) by the Access Service Providers under UASL, CMTS License and Unified License for Access Service authorisation has been dispensed with.

2. The requirement to obtain WOL as mentioned in the frequency assignment, frequency allotment, or frequency earmarking letters already issued to Access Service Providers under UASL, CMTS License and Unified License for Access Service authorisation stands deleted accordingly.
3. This shall be effective from the date of issue of this order.
4. This issues with the approval of competent authority.

(P S M Tripathi)
Deputy Wireless Adviser
to the Govt. Of India

Copy to:

1. All Access Service Providers under UL and Service Providers under UASL, CMTSL.
2. Sr.DDG (AS), DoT
3. Sr.DDG (TERM), TERM Cell, DoT.
4. Sr.DWA (ASMS), Dir(IT) for uploading on WPC Website and DoT Website respectively.
5. Secretary, TRAI, New Delhi



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Annexure II (A)

PMRTS

ARPU

ARPU: 550/sub/month
APRU: 6600/sub/annum
License fee @8%: 528/sub/annum
License fee: 44 /sub/month

Spectrum Usage Charge (SUC)

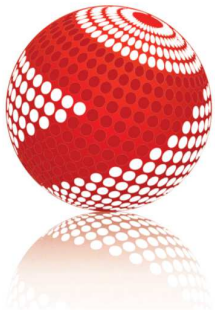
License fee = 100/sub/annum
Royalty for one block of 5 frequencies: 48000/-
Subscribers loading @ 90 subscribers/channel: 450
Royalty: $48000/450 = 106.67$ per sub/annum
Total SUC: $106.67+100= 206.67$ per sub/annum
SUC: $206.67/12= 17.22$ per sub/month

CAPEX

Capex for 5 channel system @1500000 = 7500000
Capex: $7500000/500 = 15000$ /sub

Cellular

Approximate auction value : 5660000000/MHz
No. of subscribers/MHz (with reuse) : 2000000
Total subscribers as on 30/09/2017 : 1206.7 million
Wireless subscribers as on 30/09/2017 : 1183.04 million
Gross Revenue/ Quarter : 66362 Cr
AGR / quarter : 41669 Cr
1. ARPU : 117.41/sub/month
2. SUC charge @ 4% : 4.7/sub/month
License fee @ 8% : 9.4/sub/month
3. Capex : 2000 per sub



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